

GROWTH AND MANUFACTURE OF SILK.

JANUARY 20, 1832.

Mr. Root, from the Committee on Agriculture, to which the subject had been referred, made the following

REPORT:

The Committee on Agriculture, to which had been referred a letter from Peter S. Du Ponceau, of Philadelphia, on the culture and manufacture of silk, report:

That they have examined the letter referred to them, and also the report of the Committee on Agriculture, made by the Hon. Ambrose Spencer, their chairman, on the 12th March, 1830, embracing a letter from Peter S. Du Ponceau, dated at Philadelphia, 23d February, 1830, to which they beg leave to refer, from which, and from the known character of Mr. Du Ponceau, alike distinguished for his zeal in the encouragement of the arts and sciences, as for his love of country, they are more firmly convinced of the importance of the culture of silk in these confederated republics. Its filature appears to be by far the most difficult part of the process, from the planting of the tree for the sustenance of the worm, to the preparation of the garment for the wearers' use. None but the experienced and skilful can economically perform this operation. It, therefore, seems to be indispensably necessary that a school for the instruction of the uninformed should be established, under the guidance of an able teacher. Whether the requisite aid for such an establishment should be sought from individual enterprise, or from the State or general Governments, is a question which has invited the consideration of the committee. On an experiment untried in this country, and requiring considerable capital, they believe that a reliance upon individual enterprise would be at least problematical. It is not to be expected that the several States will ever be found to act in concert, so as to attain the results which a national operation is calculated to procure. The committee are, therefore, of the opinion that it would be well for Congress to appropriate a suitable sum for the establishment of a school for the filature of silk in the neighborhood of Philadelphia, if it shall be thought to be within its legislative powers. On this question the committee submit no opinion. They have directed their chairman to introduce a bill making provision for such an establishment.

The Committee on Agriculture, who were instructed by a resolution to inquire into the expediency of adopting measures to extend the cultivation of the white mulberry tree in the United States; to promote the culture of silk, by introducing the necessary machinery for reeling the same from cocoons; and for acquiring and disseminating practical knowledge therein, make the following report, in part:

That the committee have been greatly aided in their inquiries on these important subjects by essays, published recently, by Mr. John D'Homergue, a native of France, who came to the United States during the last summer. Mr. D'Homergue, being unacquainted with our language, has been assisted in the writing these essays by Peter S. Du Ponceau, Esq., of whom it is unnecessary to speak, he being extensively known as a gentleman of the most patriotic views, possessing great scientific attainments, and an unblemished character. The committee, therefore, consider these essays, and the facts contained in them, as entitled to high confidence.

Among the facts developed are several of an important nature. It appears that American silk is superior in quality to that produced in any other country. In France and Italy, twelve pounds of cocoons are required to produce one pound of raw silk, whilst eight pounds of American cocoons will produce one pound of raw silk. That cocoons cannot be exported to a foreign market from several causes, their bulk, their liability to spoil by moulding on shipboard, and because they cannot be compressed without rendering them incapable of being afterwards reeled.

It is further demonstrated in these essays, and in a memorial lately presented by the manufacturers of silk stuffs of Lyons, in France, to the Minister of commerce and manufactures, that the art of filature can only be acquired by practical instruction, by some one intimately acquainted with, and accustomed to, that process. That no human skill or ingenuity, unaided by practical instruction, is capable of acquiring that art, to any profitable extent. It is made manifest, that, although the culture of silk has been carried on for many years in some parts of the United States, and more particularly in Connecticut, it has been conducted very unprofitably, compared with what the results might have been if the art of filature had been understood. The sewing silk made in Connecticut is from the best of silk, and is, after all, quite inferior to that of France and Italy; in these latter countries, sewing silk is manufactured from imperfect cocoons, or from refuse silk. It appears, also, that, unless the silk is properly reeled from the cocoons, it is never afterwards susceptible of use in the finer fabrics.

It is a gratifying consideration to the committee, that the benefits from the culture of silk, and the acquisition of the art of reeling the same, will be common to every part of the United States. The climate of every State in the Union is adapted to the culture of silk; hatching the eggs of the silk worm may be accelerated or retarded to suit the putting forth the leaves of the mulberry. That tree is easily propagated from the seeds of the fruit, and is adapted to almost any soil.

The committee regard the general culture of silk as a vast national advantage in many points of view. If zealously undertaken and prosecuted, it will, in a few years, furnish an article of export of great value; and thus the millions paid by the people of the United States, for silk stuffs, will be compensated for by the sale of our raw silk. The importation of silk, during the year which ended on the 30th of September, 1828, amounted to

\$8,463,563, of which \$1,274,461 were exported; but, in the same year, the exportation of bread stuffs from this country amounted only to \$5,414,665, leaving a balance against us of nearly two millions. The committee anticipate, that, at a period not remote, when we shall be in possession of the finest material produced in any country, the manufacture of silk stuffs will necessarily be introduced into the United States.

The culture of silk promises highly moral benefits, in the employment of poor women and children in a profitable business, whilst it will detract nothing from agricultural or manufacturing labor. The culture of silk will greatly benefit those States which have abundant slave labor, the value of whose principal productions, particularly in the article of cotton, has been depressed by over production. It is well ascertained, that, although France produces within herself much silk, she pays annually more than \$20,000,000 for imported silk. The committee have been unable to ascertain the amount of raw silk purchased from other countries in England; but they are satisfied the amount is large, and that, in these countries alone, a ready market can be found for all the raw silk raised in the United States for many years to come.

The committee have, through their chairman, corresponded with Mr. Du Ponceau, and this report is accompanied with a communication from that most respectable man and useful citizen, exhibiting his matured views on this interesting subject. Mr. D'Homergue is now in Philadelphia; and, unless sufficient inducements are offered to him to remain in this country, he will very soon leave it for ever. He possesses, in an eminent degree, all the practical knowledge necessary, as an instructor in the theory and practice of the art of reeling silk from cocoons, and manufacturing the same into the various forms and qualities of raw silk known in the silk trade, having, from his infancy, been instructed in all the various processes. It is believed to be almost impossible to procure from Europe another person so competent to impart a knowledge of these arts as Mr. D'Homergue is. The acquisition of his services and instruction is invaluable; and, in the opinion of the committee, if he be suffered to leave the United States at this period, it would be a national misfortune. In the confident belief that Congress will, unhesitatingly, provide for the appropriation of a small and insignificant sum of money, in promoting a measure which cannot fail to realize to the nation such rich results, the committee have prepared a bill, which they beg leave to present.

PHILADELPHIA, *February 23, 1830.*

SIR: I am honored with your letter of the 11th inst., which I have immediately communicated to Mr. D'Homergue. He desires me to convey to you, and the honorable committee, his respectful thanks for the favorable sentiments that you have expressed towards him; he wishes it also to be known and understood, that, if sufficiently encouraged, it is his intention to settle himself permanently in this country, which he has learned to appreciate.

The contents of your letter have been the subject of frequent conferences between him and me. The various matters that it brought to our consideration, and the desire on my part to lay at once my whole view of the sub-

ject before the honorable committee, and to do it with as much as possible of that clearness and precision which so extensive and complicated a subject requires, have been the cause of this answer having been so long delayed. The committee will, I hope, see from what follows that no unnecessary time has been employed.

The object of the committee appears to be to extend, throughout the United States, the knowledge of the art of preparing raw silk in all its varieties, for the domestic and foreign markets; and that it should be done in the shortest time, in the easiest manner, and with as little expense as possible.

With a view to this object, a plan has been proposed through you, and several questions asked of Mr. D'Homergue, with a view to obtaining his assistance towards carrying it into execution. The plan is the establishment of a normal school of filature in the District of Columbia, in which Mr. D'Homergue should be employed as an instructor at a fixed salary.

This plan is formed on a noble scale, and bears the stamp of the character of a great nation; it is such as would naturally occur to a man of liberal views and an enlarged mind, on considering the subject unconnected with its practical details. The knowledge of those details, however, which Mr. D'Homergue possesses, has convinced him that it would be liable to many inconveniences, which he hopes it will not be thought improper in him to suggest. In the first place, it would be very expensive, complicated in its mode of execution, and liable to various abuses; and, above all, it would be subject to the risk of ultimate failure, by bringing Mr. D'Homergue in contact, and, perhaps, in collision, with persons not acquainted with his art, to which his ignorance of the language, manners, and usages of this country might not a little contribute. This last reason alone would deter him from acceding to the committee's proposal.

For my part, sir, I must frankly acknowledge, that, after giving the subject all the consideration in my power, I have myself come to the same conclusions as Mr. D'Homergue, and I am satisfied that it is not by employing him as a salaried instructor, that the object of the committee is most likely to be attained. On the contrary, I am fully persuaded that a degree of confidence placed in that gentleman, in the manner I shall presently mention, will produce to the nation the most satisfactory results.

After this candid statement, the committee will no doubt expect that I should explain to them Mr. D'Homergue's views, and my own, on this interesting subject. I shall do it with due diffidence, but, at the same time, with perfect freedom.

The committee, I am very sure, will do justice to my motives, and be satisfied that my feelings are congenial with their own. I shall lay before them a plan, the result of which is to be the dissemination of the art of reeling silk, in all its varieties, throughout the United States, in the short space of three years, and at the moderate expense of forty thousand dollars. So far, I am convinced that the views of the committee will be fully met. They will also be pleased to find that its execution must naturally be followed by the introduction of silk manufactures into that country. In other respects, I must own that it differs from that which the committee had formed; but, in a matter of this importance, they will be willing to hear, though they should ultimately disapprove.

Before I begin to state the offers of Mr. D'Homergue, and the plan founded upon them, it is necessary that I should mention a few introductory facts.

The mechanical part of reeling silk in France and Italy is performed entirely by women. There are in those countries what are called great and small filatures. The former are large establishments, in which from 50 to 500 reels are at work; the women employed there are under the superintendence of a director, who is thoroughly acquainted with the mechanical as well as the mercantile part of the business. Those directors are brought up to the profession. The women employed in those large filatures are well paid, and generally remain there till the end of their days. The small, or, as we should call them, *domestic* filatures, are carried on in families, by the farmers' wives and daughters, who work from one to five reels, either with cocoons of their own raising, or those they purchase of their neighbors, by which they make a handsome income at the end of the year. Those women, in general, have preserved the art in their families from generation to generation; hence, you may have seen in the memorial of the merchants of Lyons, which I had the honor to send you, that those merchants complain of their imperfect routine; I believe their complaints arise in part from jealousy, and the spirit of monopoly; still I am not unwilling to believe that the silk from *domestic* reels is not as perfect as that which comes from the large filatures; it sells, however, and the manufacturers know how to employ it. It must be added that the French and Italian female reelers perform their work mechanically, and are, in other respects, of the grossest ignorance; few of them, if any, knowing even how to read and write. Our American women will prove themselves far superior in every respect, and their domestic filatures will produce perfect silk, because they will not have received their instruction through their great grandmothers, before the art was improved as it is now.

In this country, there should be both great and small, or domestic filatures: the former will be the depositories of all the improvements in the arts; the latter will contribute to the ease of families; and there is no danger of there being an excess of the article in the market. There must be filatures of all sizes and all dimensions, according to the means of those who will undertake them. Full and free competition can alone ensure success.

The first thing to be done, therefore, is to instruct, in the art of reeling silk, a sufficient number of young men, to disseminate it at once through the country. Those young men will, when instructed, set up filatures with a greater or lesser number of reels, according to their means; in which they will be obliged to employ women, who will not, as in Italy and France, remain all their lives on wages, but, after a certain time, will return to their families or get married and set up small filatures of their own, which they can do at a trifling expense. They will, probably, also plant a few mulberry trees on their farms; and the females of the family will raise silk worms, and produce cocoons to be reeled in the house. This is the course which the thing must infallibly take.

Thus much being premised, I now proceed to state the offers of Mr. D'Homergue. He offers to instruct sixty young men, to be designated by the Government of the United States. They should be healthy, intelligent, active, and dexterous youths, between the ages of eighteen and twenty-five, and having as much as possible a natural disposition to the mechanical arts. They will be instructed in the theory and practice of the art of reeling silk from the cocoons into the various forms or qualities of raw silk. They will be taught the theoretical and practical, the mercantile as well as the mechanical, parts of the business, with the most modern improvements. They will,

in short, at the end of the course of instruction, be enabled to take charge, as directors, of a filature, however extensive, to instruct women, and, in short, to do every thing in that branch which Mr. D'Homergue may do himself.

The course of instruction will require two years; that is to say, two seasons, from the 1st of July to the middle or end of November in each year. The young men will board themselves where they please in the neighborhood of the filature, which they will be expected regularly to attend during working hours, to receive their instruction. The remainder of the year they may dispose of themselves as they or their friends shall think proper.

It is intended by Mr. D'Homergue to erect his filature in the vicinity of Philadelphia, as the most convenient place, for reasons which shall hereafter be explained.

The course of instruction can only begin on the 1st of July, 1831; the present year must be employed in preparations. Mr. D'Homergue will have, before the 1st of July, to travel through several of the States, in order to secure cocoons; and at the same time he will instruct the farmers, as much as will be in his power, respecting the culture of the mulberry tree, and the raising of silk worms. Every year, in the winter or spring during the three years, he will travel in the same manner, varying his course as much as possible; this will be necessary, on account of the scarcity of cocoons, which must be expected to last some time, and probably to the end of the contemplated three years. In the approaching summer he will establish a filature near Philadelphia, with at least twenty women, so that the young men, at the next season, when their course will begin, may see it at work, and learn how such an establishment is to be directed. In the next year the filature will be enlarged for the immediate instruction of the sixty pupils who, it is expected, will be sent all at the same time. Improved machinery will be imported from Europe; and every thing necessary will be done in the course of the three years, that the young men may be fully instructed, and enabled, when they return home, to set up filatures in their respective neighborhoods.

Speaking of machinery, I cannot avoid noticing the celebrated apparatus of M. Gensoul, so often mentioned in the memorial of the merchants of Lyons, and which it contemplates to introduce into all the filatures of France. As it is very expensive, the memorial recommends to the French Government to distribute bounties to an amount not less than 600,000 francs (\$120,000,) by way of encouragement to those who will introduce it into their establishments.

This apparatus can only be employed in large filatures, of at least thirty reels. It is moved by horse or water power, or by steam. Its operation is to turn at the same time the arms of all the reels employed, while the reelers are at their work, which otherwise must be done by a girl or boy stationed at each reel. Its advantages are the following:

1. It saves the time of reelers, who are not incommoded by fire and smoke, and are not obliged to stop to feed their fires, as the hot water is conveyed by pipes to their several basins, and the furnaces to each reel are unnecessary.

2. It saves the labor of a girl or boy to each reel, who otherwise is employed to turn the arms which this machinery sets in motion. This will be very important in States where slave labor is employed, and will be economical every where.

3. The motion of the arms of the reel, thus produced by machinery, is perfectly equal and regular, which is not always the case when they are moved by boys or girls, who sometimes turn too fast, and sometimes too slow, which effects in some degree the regularity of the threads, however skilful the reelers may be.

Mr. D'Homergue intends, if his offers are accepted, to import this valuable apparatus, in the first place, as a model, which will soon be imitated, and, perhaps, improved, by our ingenious workmen; and, also, to enable him to instruct the sixty young men in the knowledge of all its parts, and in the use of it. It is very complicated, and requires great care in packing and forwarding. It consists of more than three thousand pieces, which must be all marked and numbered, in order that it may be properly put up on its arrival. It requires, therefore, the aid of a person profoundly skilled in the business. Mr. D'Homergue proposes to employ his father. He would expect that this apparatus, and what other machinery he should think it necessary to import during the three years, should be free of duty.

By means of this plan, the United States would be in possession, at the end of the contemplated period, of the means of offering to the markets of Europe and of this country raw silk, of all its different qualities, in the highest perfection. The committee will have observed in the Lyons memorial, how much importance is attached to the perfection of the filature, and what complaints are made of the want of uniformity in the silk produced. It would be a most essential point, that the first raw silk which shall come out of the American filatures should be as perfect as possible, and uniformly so, because, in addition to the superior beauty of the material, it would at once give a name to American silk, which would establish its reputation on a solid basis, and make it every where sought for, and purchased in a manner with the eyes shut. If the United States are determined to introduce this manufacture into this country, the committee will be sensible that it should not be done partially, and that as little as possible should be left to chance hereafter. A good method, introduced every where at once from the beginning, will, with difficulty, degenerate.

If this plan should be adopted, and carried into execution, it will follow, that, at the end of the three years' instruction, three sorts of filatures may and will be immediately introduced into the different parts of the United States. 1. Large filatures, of thirty reels and upwards, moved by Gensoul's apparatus, by horse or water power, or by steam. 2. Middle sized filatures, of six reels and upwards, moved by hand in the ordinary way. 3. Small or domestic filatures, of five reels and below; these would employ the farmers' wives and daughters, and the slave population, through the country. The difference in the perfection of the silk, between that which is reeled with Gensoul's apparatus and that reeled by hand in the ordinary way, is hardly perceptible, when the directors are good, and the reelers are attentive, and have been well instructed.

The reason why, in France, the silk reeled upon farms obtains a less price than that reeled in filatures, is, that the peasants' wives and daughters follow an antiquated routine, as has been mentioned. In this country the method would be uniform every where. Negligence and inattention alone could produce a difference in the value of the silk reeled in farm houses; and this negligence would carry with it its own punishment. The raw silk of China, much inferior to that of France, is still sure to find purchasers; and there is little doubt but that it must be, in time, superseded by American silk.

When the art of reeling silk shall have been thus established through the country, it is to be expected that the article will abound in the land; particularly, if measures are taken, as will be presently mentioned, for promoting the planting and growth of mulberry trees. Mr. D'Homergue then will have a great many competitors in the business of filature, which, if monopolized, would have enriched him; consequently, it will be his interest, and it is his intention, if this plan succeeds, to turn his attention to manufactures, from which he expects he will be able to make a competent fortune, and at the same time to enrich the country. In this, he knows he will also have competitors; (for it is said that there is already in Boston a good English silk throwster, of the name of Edward Brown, who has brought with him the necessary machinery for the exercise of his profession;) but Mr. D'Homergue relies on his knowledge of the various arts connected with this business, and is not afraid of meeting competitors.

The course which the silk business will take when filatures of raw silk shall be established through the country, is expected to be as follows:

1. The fringe-makers, who are already numerous in this country, will be supplied with the article, which they now import at a great expense, and in considerable quantities. An eminent fringe-maker of this city said, in my presence, that he imported raw silk, annually, to the amount of \$20,000.

2. The *filoselle* or floss silk which will issue from the filatures, and needs not to be thrown, but only carded and spun in the usual way, will be immediately employed by our industrious workmen in making stockings, caps, vestings, and other kinds of hosiery.

3. The art of throwing silk, that is, of giving it the last preparation for the loom, is not so difficult of acquisition as the art of reeling from the cocoons, which is the foundation of all: silk throwsters will come over from England and France, and that branch of business will soon spread through the country.

4. The weaving of stuffs out of the three first qualities of raw silk, singles, tram, and organzine, will next follow. It cannot be expected that the beautiful gold and silver tissues and embroidered stuffs, for which the Lyons manufacturers are so eminently distinguished, will be introduced for a considerable time. Velvets and satins also will be among the last that will be manufactured in America; but the Lyons memorial, if I remember right, says that those rich stuffs amount only to one-fourth in value of the silk manufactures of France, and that the other three-fourths consists of those plain tissues which are yearly imported to such an immense amount into this country. It may be expected, therefore, (such is the opinion of Mr. D'Homergue, and my own,) that the manufactures of plain tissues and those of mixed stuffs of silk and wool, and cotton and silk, will rapidly extend themselves through the United States. There is no extraordinary difficulty in the mode of weaving; and Mr. D'Homergue is fully convinced that our ingenious and industrious weavers will master that business in a short time.

But all depends on the reeling of the raw silk. It is the foundation of all; the *sine qua non*, without which all undertakings connected with silk must prove ruinous to those who shall venture to embark in them. Fine raw silk alone, though it were never employed here, will, nevertheless, be a great source of riches as an article of commerce.

I have thus stated to you, sir, as clearly as I have been able, the offer made by Mr. D'Homergue to teach that valuable art, in such a manner as to disseminate it at once through every part of this country. I have shown,

in as much detail as I have thought necessary to make it well understood, the manner in which this proposal is intended to be carried into execution; and, lastly, I have endeavored to sketch a view of the effects it may reasonably be expected to produce. I have now to state the terms on which Mr. D'Homergue is willing to engage himself to its performance.

He requires the sum of forty thousand dollars, for which he will engage to instruct sixty young men in the art of reeling silk from the cocoons, as has been above mentioned. He will be, for that sum, at all the expense that will be required for carrying the plan into full and complete execution; and he will never ask or apply for a single cent more, by way of advance, reimbursement, reward, compensation, or on any other account whatsoever. The forty thousand dollars are expected to do the business completely, and to leave something at the end for Mr. D'Homergue; what that may be cannot be calculated, but he hopes that it will be sufficient to enable him to set up for himself in the other branches of the silk manufacture that he contemplates.

He has calculated that it will be necessary that the money should be advanced by the United States, at the following periods: 1. Ten thousand dollars immediately. 2. Twenty thousand dollars on the 1st of March, 1831. 3. Ten thousand dollars on the 1st of March, 1832. The reason for which the sum is doubled for the next year, is, that machinery will have to be imported from France, to a large amount, in the course of that year. The reason why the money is thus asked for in advance, is, in order that the business may not, at any time, or on any account, be retarded for want of funds, and that all may go on with the necessary rapidity.

Here, sir, I am well convinced that it cannot be reasonably asked, that this nation should trust with so large a sum a young stranger, who has not been above nine months in this country, and who can give no pledge of his solvability in case of failure. This objection has struck me with the same force with which it will strike the committee, and I have long been revolving in my mind the means, if any could be found, to get over it; at last, I have come to the resolution to make the following proposal in my own name.

I have set my whole heart on the introduction of the manufacture of silk into this country; I know it is possible, and I know, also, that great honor awaits those who shall have been instrumental in it; I am ambitious of that honor; and, moreover, I have committed myself so far in recommending this course of proceeding, that I stand in a manner pledged for its success. I cannot better prove my firm conviction, than by the offer I am now going to make.

I am willing to interpose my personal responsibility between the nation and Mr. D'Homergue; I offer to act as a trustee, to receive the money, and see to its application. Mr. D'Homergue is willing to place himself entirely under my direction; and, in consequence, I shall be responsible for any misuse of the money to be thus placed in my hands: I shall be in fact the director, to whose control Mr. D'Homergue will be bound to submit. He shall receive no money but through my hands, and I shall see to its application. In short, I shall act for the United States in this manner, as I should do for myself, if I were in their place. For this service, I shall expect no reward or compensation whatever. I am devoted to the object; I have leisure and health. It will be a pleasure to me to direct and watch over this great undertaking, and to enjoy its progress; and I shall consider it as a glorious employment of the latter years of a long life.

Now, sir, that you and the honorable committee may not think that I am here guided by unreasonable enthusiasm, I think it right to state to you the grounds on which I am induced to make an offer, which, otherwise, might be considered by some as at least a rash act, but which is only the effect of a strong conviction of the probability, I had almost said of the certainty, of success indeed, saving unforeseen accidents, I cannot conceive how the project can fail. My grounds are the following:

1. Of the talents of Mr. D'Homergue, I have not the least doubt. His recommendations from Europe are explicit on that head. The silk that he has reeled in this country, has been admired by respectable silk merchants from Lyons, now in this country who are competent judges. I enclose a small sample of raw silk, of the quality called *organzine*, which he has reeled, in my presence, from cocoons sent to him by Thomas Sumter, Esq., of Statesburg, South Carolina. They were most beautiful, and of an extraordinary size. This silk was shown in my presence to the fringe-maker whom I have already mentioned, who mistook it for that fine silk with which they make Valenciennes lace, which he saw sold at Paris for \$20 a pound; but Mr. D'Homergue admits that it is not of that quality. This sample is very small, but there were but few cocoons reeled; and similar samples have been distributed among friends, and some sent abroad. The committee will, no doubt, be struck with the dazzling whiteness of the silk; such is seldom found out of this country.

2. As to the personal character and disposition of Mr. D'Homergue, I have had sufficient opportunity of knowing it, in a constant intercourse during nine months. He is a modest, ingenuous young man, ambitious of fame, and of perfectly correct principles. He places in me implicit confidence; and is willing to be, as he has hitherto been, entirely guided by my counsels. I can rely on his moral character; and I have not the least doubt that he will, under my direction, faithfully execute whatever he shall undertake to do.

I now shall state to the committee the reasons which convince me that he is the person the best calculated, and, perhaps, the only one, through whom the silk manufactures can be speedily and effectually introduced into this country.

His being the son of an eminent silk manufacturer has been attested to me, not only by himself, but by credible persons acquainted with his family. His knowledge is not confined to the reeling of silk, but extends to the various branches of the silk manufacture. Such persons are very rare, even in Europe; it was a fortunate accident that brought Mr. D'Homergue into this country. Silk reelers may be found, silk throwsters also, and manufacturers skilled in particular branches; but none, or very few, and none at his age, possessed of so general a knowledge. His youth, too, is an immense advantage, as it will identify him with the country, and give him time to carry all his projects into execution. French reelers cannot be induced to leave their country; and if they could, and as they are very ignorant, and work mechanically, they would not be able to teach the art as Mr. D'Homergue can. Directors of filatures are, in general, men of an advanced age, with families, well compensated for their labor; these could only with great difficulty be obtained; and it is very doubtful whether their talents for instructing would be equal to their pretensions, which, no doubt, would be very elevated. I consider Mr. D'Homergue as an important acquisition to this country.

Thus, sir, I have ventured to lay before you and the honorable committee a plan for the firm establishment of the filature, and eventually of the manufacture of silk in this country; which, after much reflection, and the most mature deliberation, has, and still appears to me to be, the cheapest, the easiest, and the most effectual, to produce this result completely, and in the shortest space of time possible. Permit me, before I conclude, to submit a few observations.

1. I believe it must be admitted, that, if the object can be attained for the sum of forty thousand dollars, without any further expense to the United States, it will be, considering its value, the cheapest purchase that ever was made. When we consider the sacrifices which the sovereigns of Europe have made for the same object, the noble rewards that they have given to individuals under similar circumstances; and when we consider, particularly, that, at the present moment, the Government of France is called upon, by the merchants of Lyons, to expend the sum of \$120,000 in bounties to the owners of filatures, merely to induce them to purchase and use an expensive machinery, that the preparation of raw silk, long since known and practised in that country, may be uniformly carried to the highest degree of perfection, we may be able to judge of the importance and of the value in which is held, in Europe, that fundamental branch of the silk trade, on the perfection of which every thing else depends; and we are unavoidably led to the conclusion, that forty thousand dollars is a trifling sum, indeed, for securing the introduction, generally and uniformly through our country, of so valuable an art.

As relates to Mr. D'Homergue, I do not think that less, in justice, can be offered to him, undertaking as he does to bear all the expenses. From the view he has taken of the subject, he does not expect, at the end of the three years, to have much more than the *materiel* of the establishment, which will, of course, remain to him, and perhaps, some money. If it were otherwise, it appears to me a just principle, that he who makes a nation's fortune, should make his own. But Mr. D'Homergue does not expect to make his fortune by the execution of this plan, but only to be put in the way of making it by future exertions, which will also be highly beneficial to the country.

2. I regret very much that, as the committee contemplated, the execution of this plan cannot take place in the District of Columbia; but several weighty reasons are opposed to it. In the first place, there are not in that District the resources that are to be found in one of our large cities. 2dly. In the employment of women, the differences of color might present great obstacles, which will not exist when several reeling establishments will be scattered through the States. 3dly. I have already stated the difficulties which Mr. D'Homergue would find in his connexions with strangers, and which might eventually produce a failure of the project; and I am also convinced, that, from my knowledge of him, his character and disposition, from the confidence that he places in me, and from my having become, in some degree, familiar with the subject of silk, and the various modes of employing it, he would more willingly place himself under my direction, than that of other persons with whom he might not so freely communicate. Under these circumstances, Philadelphia seems to be the place where the plan in question, if adopted, should be executed.

Nor does it seem very material where the sixty young Americans are taught, since their instruction is to take so short a time, and their acquired

knowledge so soon to be diffused through the whole land. It would have been different if a permanent school were to have been established, as seems to have been contemplated by the committee. According to the proposed plan, the school will be only temporary; and, in the course of two summers, the instruction of the young citizens will have been begun and completed.

One more observation remains for me to make.

Whatever plan may be pursued for the introduction of the filature of raw silk into the United States, it will be indispensably necessary to take measures, at the same time, to increase the quantity of cocoons. It will be sufficient, for that purpose, to encourage the planting of the white Italian mulberry tree, because, when it shall abound through the country, silk worms and cocoons will naturally follow. I would, therefore, take the liberty to suggest the expediency of granting a bounty, for a limited time, say five years, of — dollars for every three thousand such mulberry trees, of three years' growth; and if it should be wished to extend the benefit of it to small cultivators, then a proportionate sum for every thousand. The amount of the bounty should depend on the greater or lesser probability that there is of its producing the desired effect, so as to obtain the greatest possible quantity of mulberry trees at the least possible expense to the United States. I do not profess to be a judge in this matter. Mr. D'Homergue, on the supposition that the citizens would immediately and generally turn their attention to the planting of those trees, proposed fifty dollars for every three thousand; a gentleman from Indiana county, in this State, on whose judgment I place great reliance, on a contrary supposition, proposed one hundred dollars for the same quantity. But this is a matter on which the members of the Legislature are most competent to decide. If such a bounty were granted, it appears to me that no other legislative measure would be required.

I have endeavored, in this communication, to be as clear, and, at the same time, as brief as possible; I am not sure, however, that I have succeeded. Should any further information be wanted from Mr. D'Homergue or myself, it will be given with great pleasure, and every question readily answered.

I have the honor to be,

With the highest consideration and respect,

Sir, your most obedient

And very humble servant,

PETER S. DU PONCEAU.

HON. AMBROSE SPENCER,

*Chairman of the Committee of Agriculture of the
House of Representatives of the United States.*

*Letter from Peter S. Du Ponceau, of Philadelphia, on the culture and
manufacture of Silk.*

PHILADELPHIA, 9th December, 1831.

SIR: Some time during the first session of the 21st Congress, I had the honor of presenting to the honorable House over which you preside a copy of a pamphlet, entitled "Essays on American Silk," the joint work of Mr. John D'Homergue, a silk manufacturer, then lately arrived into this coun-

try from France, and myself. The object of that work was to show the importance of the art of spinning or reeling silk from the cocoons, without which that produce of our agriculture could neither be exported abroad, nor be profitably employed in manufactures at home. The House, considering the subject as worthy of their attention, referred it to their Committee on Agriculture, who, convinced by the facts and reasonings which the Essays contained, determined on recommending to Congress the establishment of a normal school of silk filature, on national principles, that is to say, so that the benefits of it might be diffused at the same time through all the States in the Union; and with that view, they did me the honor to write to me through their chairman, desiring me to inquire and inform them of the terms on which Mr. D'Homergue would consent to be placed as instructor in that establishment. In compliance with their wishes, after conferring with Mr. D'Homergue, I submitted to them a plan, which they approved, and reported to the House in the form of a bill. That plan, as well as the bill, being on the files of the House, I shall abstain from stating their details. I shall only say that the committee, in their report introductory to the bill, adopted and enforced the main arguments contained in the work referred to them, in favor of the importance of the art of reeling, and the difficulty of obtaining a qualified teacher of it from Europe, and indeed did not hesitate to say that it would be "a national misfortune," if Mr. D'Homergue, whose talents were competent to the purpose, should be suffered to leave this country.

On the bill being reported by the committee, it was referred to a Committee of the Whole House, and printed; but the pressure of other business prevented its being taken into consideration. The House, however, ordered 6,000 copies of the report of the Committee on Agriculture, of my letter to them, and also of the Essays on American Silk, to be printed for the use of the members. At their second session, they appointed a day for the discussion of that bill; but it could not then be taken up: and the session being short, and business pressing, nothing further was done upon it.

Encouraged by the favorable report of the Committee on Agriculture, and the disposition shown by the National Legislature to give to the subject a full and mature consideration, I thought it my duty, as a citizen anxious for the welfare of his country, to make every exertion to prevent Mr. D'Homergue from leaving the United States, and at the same time, with his assistance, to proceed, as far as my limited means would permit me, in showing to the nation, by actual experiments, the advantages that would result to the country from the filature of silk, properly conducted. What was done during the summer of 1830, I had the honor to communicate to you in two letters, dated in December of that year, to which, as they have been published by order of your honorable House, I shall merely beg leave to refer, particularly to that of the 13th, which states the progress of the silk culture and manufacture during that year, and the then existing prospects for the future.

It may not be improper here to state, that these prospects during the present year have continued to brighten. The culture of the mulberry tree, and raising of silk worms, have considerably increased in almost every State from north to south. Manufacturers of silk, and machine makers, are coming in numbers from Europe. Throwsting mills, heretofore unknown, have been erected, and are in operation in several parts of this Union. It is to be regretted that they work on foreign raw silk, chiefly imported from China;

but perhaps it may be well to let our manufacturers try their hands on the cheaper silks of other countries, while ours, more valuable, will be an article of exportation. Experience alone can show what will be the result of this impulse, which is felt at the same time with equal force towards the culture and manufacture of silk. The latter does not seem to want encouragement; the China and Bengal trade will supply it with material, and emigration from Europe with competent workmen and machinery of every description. But among those emigrants no reelers have yet appeared, and the same necessity continues for the dissemination of a perfect and uniform mode of reeling silk into the country; otherwise, we may indeed have silk manufactures, but, like England and Mexico, we shall have to draw the material from other countries.

I have, as far as I have been able, continued my exertions during the last summer. The market has been kept open at Philadelphia for the purchase of cocoons, for which 40 cents per lb. has been given. Women have been employed in reeling them. The silk reeled during the summer of 1830 was sent partly to England, partly to France, to be manufactured, and some (that of the coarsest kind) was sent to Mexico, where it was sold, before trial, for \$4 75 a pound. That sent to England was manufactured at Manchester into a stuff for ladies' dresses, called Gros de Naples, of which I have the honor of sending you two samples, one black, and the other lavender color. The pieces are expected by a vessel from London, not yet arrived in this port.

The raw silk of which these stuffs were made, though not perfectly reeled, which could not be expected, as it was the first essay of our unexperienced women, was pronounced to be a fair beginning, and to give favorable hopes for the future. "The samples received," says a writer in the London Times, of the 24th of February last, "show that Mr. D'Homergue's lessons have been addressed to willing and apt scholars, who will, it is hoped, soon equal the reelers of France and Italy." The manufacturer writes, that it stood well the various processes of throwing, dyeing, and weaving; and, what is remarkable in those operations, it only lost 3½ per cent. by waste, while French and Italian silks lose from 4 to 10 per cent.

The quality of the silk is said to be superior to that of some parts of Italy, and fully equal to that of Bengal. The color of some of it, which we call coffee color, believed to be peculiar to a certain kind of American cocoons, was at first objected to; but it was found on experiment to take colors by dyeing, as well as any other silk. The manufacturer observes, that there is some prejudice in England about American silk, as not sufficiently known, but that there is no doubt that it will be conquered, and that our silk will sell well in that country.

Orders have been given to manufacture in like manner the raw silk sent to France, but the result is not yet known. The silk reeled this year showed improvement in our female reelers. On winding and throwing, that which was reeled from good cocoons lost only by waste one and a quarter per cent. It was thrown by an English silk throwster, lately established at Manayunk, near this city. Unfortunately, being employed by another person in working foreign silk, he had not time to throw all I could have given him. I enclose samples of silk thrown by him, of the three qualities called singles, organzine, and tram. In this state, it may be either exported or manufactured. It wants only to be boiled and dyed, to be ready for the loom. The boiling process is to free it from the gum with which it is still impregnated.

It was my intention to have had all the silk reeled this year woven into different kinds of stuffs by the silk manufacturers, of whom there are several in this city who have emigrated hither from Europe; but, besides the impossibility of having it thrown, the throwster being otherwise employed, I found that those manufacturers, for want of employment, were not provided with the necessary machinery, and the expense and time that it would have required to set them to work could not be afforded. One person only (a native citizen) had the requisite machinery, though but in indifferent order, to make plush silk, which is now much used in the manufacture of hats, and of which waistcoats, capes, and other articles may be made. I had a few yards of that stuff manufactured by him, of which I have the honor to enclose a sample; it is said to be superior to any imported. I am persuaded, however, such is the progress of silk manufactures, that several looms will be at work on it in the course of the next year, and that foreign silk will be worked, if American cannot be obtained.

Such, sir, is the state of things with respect to the culture and manufacture of silk in this country, and such are the prospects that it holds out for the future. I am bound to say, in justice to Mr. D'Homergue, that much of it is due to his zeal and exertions: although a foreigner, bound by no ties whatever to this country, he has devoted to it during the last two years his whole powers of body and mind. He has made no secret of his art; he has instructed our women in it; he has imparted information to all who have asked for it; and, I am free to say, that if he shall remain among us, he will be a valuable citizen. At any rate, this country will be indebted to him for having pointed out the true and only means of making the culture of silk a source of national riches and prosperity.

I beg your pardon for the length of this letter. My only object is to request you to place the subject to which it refers in the view of the present Legislature, as it would not otherwise come properly before them. They will then take such measures respecting it as in their wisdom they shall think proper.

I have the honor to be,

With the highest respect, sir,

Your most obedient, humble servant,

PETER S. DU PONCEAU.

HON. ANDREW STEVENSON,

Speaker of the House of Representatives of the U. S.

It is the purpose of this paper to discuss the question of the
relation of the physician to the patient in the light of the
ethical principles which govern the medical profession. It is
in the opinion of the writer that the physician's duty to his
patient is not only to cure the disease but also to relieve the
suffering and to comfort the patient in the hour of death.
The physician should be guided by the principles of
beneficence, non-maleficence, and justice. He should
always act in the best interest of his patient and
should never allow his personal feelings or the
influence of others to interfere with his judgment.
The physician should also be guided by the principles of
truthfulness and honesty. He should never deceive his
patient or withhold information from him. He should
always be frank and open in his dealings with his
patient and should never attempt to hide the truth from
him. The physician should also be guided by the
principles of respect for the patient's autonomy. He
should never treat the patient as a mere object but
as a person with the right to make decisions about
his own body and health. He should always obtain the
patient's consent before performing any procedure and
should never perform a procedure without the patient's
knowledge and approval. The physician should also be
guided by the principles of confidentiality. He should
never disclose the patient's medical history or any
other information that might be harmful to the patient
to anyone who is not authorized to receive it. He
should always keep the patient's medical records
confidential and should never use them for any
purpose other than the patient's medical care. The
physician should also be guided by the principles of
fairness and equity. He should never discriminate
against any patient on the basis of race, color, or
social status. He should always treat all patients
equally and should never allow his personal biases to
interfere with his medical judgment. The physician
should also be guided by the principles of
integrity and honor. He should never engage in any
activity that might bring the medical profession into
disrepute. He should always maintain the highest
standards of conduct and should never allow himself to
be influenced by the temptations of the world, the
flesh, or the devil. The physician should always
be guided by the principles of the medical ethics
which govern his profession and should never allow
his personal feelings or the influence of others to
interfere with his judgment. The physician should
always act in the best interest of his patient and
should never allow his personal feelings or the
influence of others to interfere with his judgment.

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